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or done any other foolish stunts. Dreams of skunks and other "varmint" following Taggart's tracks and eating the eggs filled my head that night; but all eventually turned out well, and to make a long story short, I got the female bird, nest and eggs, and Emerson took photographs of the whole outfit. The bird was seen leaving the nest, and was collected right then.

The nest was a poor affair—simply a few dry grasses were arranged on one side and part of the bottom of an irregular hole on the edge of a bank along the side of a small gully. The eggs rested upon the earth with a few grasses crost between, and a small sage sheltered the nest from the sun.

The lateness of the date, July 8, 1908, augured well for incubated eggs, but we were glad to find these perfectly fresh. They were three in number, glossy white with no trace of the bluish color spoken of by some writers, tho slightly pink before blowing. The eggs are now in the writer's collection, and are prized the most of all the shells to be found there.

THE ANNA HUMMINGBIRD

By J. H. BOWLES

NUMBER one on my list of "birds seen at Santa Barbara" is the Anna Hummingbird (*Calypte anna*), a splendid male noted on November 17, 1909.

Accustomed as I was to the much smaller hummers of the north, and to the Ruby-throated Hummingbird of the New England states, this large and handsome species became at once of the greatest interest to me and I determined to make an especial study of it.

Altho most numerous during the winter months, the Anna Hummers are very plentiful at all seasons, being the commonest member of their family in this portion of southern California. A friend who has a large flowering shrub on his estate assured me that he had seen more than forty of these hummers feeding at one time among its blossoms, and indeed in many such localities one might shut his eyes and believe himself to be surrounded by a swarm of giant bees.

All hummingbirds seem possest with the most irascible dispositions, and Anna is very far from being an exception to the rule. The females are, if possible, more pugnacious than the males, and nothing seems to give them greater pleasure than to pick a quarrel with some other bird, preferably of their own kind, altho anything with two wings is acceptable. It is a most amusing experience to sit near the nest of some such bird as the Parkman Wren, whose loud complaints at your intrusion have attracted numerous of her sympathetic avian neighbors. Presently an Anna will whiz upon the scene and at once start in on a systematic campaign against every bird in the immediate vicinity.

On one occasion I notist a female making repeated dives into the center of a large wild rose bush, and an examination showed a four-foot corral snake to be the cause. Upon killing the snake I found him to have been guilty of nothing more reprehensible than eating a lizard, so throwing him on the ground I moved a short distance away to see what the hummer would do. She had been watching from the top of a neighboring live oak, and almost immediately darted down and hovered over her enemy, gradually dropping closer until she was within a foot of him. Her head was bent far down and here extreme caution, in markt contrast to the rough and tumble tactics usually employed, showed how fully she appreciated her

danger. Finally, having examined him from all sides and becoming fully satisfied that he was quite dead, she whirled up into the air and dashed away in search of new worlds to conquer.

The food supply, as is of course the case with all hummers, consists for the most part of tiny insects secured from the flowers. Anna, however, delights to rob the webs of the larger spiders of their prey, and has also developed the art of fly-catching in mid-air to an extent that I have seen in no others of the family. Often, while perched on a telegraph wire or the top of a small tree, she will dart up into the air and capture some minute wayfarer, returning to her perch and gulping it down with the greatest apparent satisfaction.

Soft insects are the rule in hummingbird diet, but this species appears to be fond of a tiny metallic-green beetle of decidedly hard-shelled characteristics. The well known hummingbird manner of buzzing up to a flower and dipping in the beak while on the wing is a fixed rule with all the adults; but when first learning to secure food for themselves the young birds find this rather too much for them. They will buzz in front of a flower for a few seconds, but their strength soon gives out and they are obliged to settle in, or on, the flower and pick out their food in a most ludicrous and unhummingbird-like manner.

In its habits this species has one characteristic in which it is very nearly unique among the wild birds of the United States. This is in the truly remarkable length of the nesting season; for it seems extremely probable that nests may be found in almost every month of the year. The earliest, or possibly it should be called the latest, evidence of nesting that I have personally noted was on January 3 of the present year, when I saw a well-grown young bird perched in a cypress tree and guarded by its mother. A few yards away in the same tree was the empty nest; the egg from which this young one was hatched could not possibly have been laid more recently than the third week in November.

I was unable to get into the field until December, but in the first week of that month several male hummers were most assiduously courting their mates, which has been an every day occurrence up to the middle of June when this article is being written. The manner of their courtship is thoroughly in keeping with the vigorous nature of the birds. The female usually sits in the midst of some low bush or tree, motionless, with beak pointing downward, apparently paying not the smallest attention to the frantic efforts of the gorgeous male to attract her. With his flashing gorget and crown-plate extended to its greatest compass he mounts into the air some fifty or sixty feet above her and, diving headlong downward, passes in a great arc a few inches under her and ascends to his former altitude. This he repeats as fast as possible, one that I saw making twenty-two consecutive dives.

At each dip he gives his love song which consists of a rather harsh "chû-chû-chû", which is repeated rather slowly and is surprisingly loud for so small a bird. The patience of the same male above-mentioned seemed to suddenly give out, for he paused at last beneath his unresponsive ladylove, then glided slowly up to her and catching her beak with his own pulled her headlong from her perch. The lady did not appear to resent this in the least, for the two birds at once flew away together, the male taking the lead.

My first occupied nest was found on December 29, my attention being attracted by the female flying to it with a small feather in her bill. This nest was situated twelve feet up in a cypress tree upon two cones that were attached to a dead twig. During the next two days there was an almost continual downpour of rain so that the nest became thoroughly soaked thru; nevertheless the bird was at work again on the first of the year, as soon as the sun put in its appearance. The first egg was laid

January 3, but during the following night a heavy frost left ice more than a quarter of an inch in thickness on the puddles.

It seemed to me that this would settle matters, as the bird was nowhere to be seen; but on the morning of the 5th she was sitting jauntily upon her full complement of two eggs. She flew away when I climbed to the nest, but returned in about twenty minutes with a large beakful of spider-webs and lichens. These she spread carefully over the outside of the nest while she was sitting in it, smoothing them down with her bill and rounding the edge of the nest with her chin and throat. This was the first sign of exterior decoration that the nest received, and in all others that I have since examined no thatching was done until after both eggs were laid.

I think the icy weather must have been too severe for the first egg, for, whatever the cause, only one egg hatched. This took place on January 22, showing the period of incubation to be just seventeen days. It may be interesting to note here that I have found thirteen days to be the period of incubation for eggs of the Black-chinned Hummer (*Archilochus alexandri*). This great difference I think may be attributed in part to the consistency of the albumen, which in eggs of *C. anna* is thick and almost gummy, while in *A. alexandri* it is as thin as in eggs of other small birds.

In spite of the very cold, rainy weather my young hummer grew very rapidly; but it was not until he was thirteen days old that his eyes opened. He must have been exceedingly hardy, for most of the time his mother was obliged to leave him to the mercy of the elements in order to secure food. One often wonders what law of nature ordains that the male hummer should spend all his time in idleness and pleasure; for he never does a stroke of work either in building the nest or in feeding his mate and young.

The manner of the female in feeding her young by regurgitation and apparently thrusting her rapier-like bill thru and thru her baby is too old a story to bear repetition, so I will merely say in the words of Mr. Bradford Torrey that it is truly, "a frightful looking act."

On February 13, when he was just three weeks old, the young bird left the nest, but remained in the home tree for the greater part of the day.

In summing up, let me add that the eggs are invariably two in a complete set, pure milky white in color, and elliptical ovate in shape. An average specimen measures $.53 \times .32$ inches.

The nest is constructed mainly of willow down, often intermixt with numerous small feathers, with an outside thatching of lichens and bits of dead weeds that are held in place by a liberal supply of cobwebs. This thatching is seldom or never applied until after the eggs are laid, but it then receives continual attention until the appearance of the young.

An average nest measures externally 1.5 inches in width by 1.25 inches in depth, the inner dimensions being 1 inch in width by .75 inch in depth. All localities seem to be suitable for nest building: a sycamore in some canyon bed, a live oak in the foothills, or an orange tree in your garden, altho pepper trees and cypress are possibly the favorites around Santa Barbara.

The nest is usually placed on one of the smaller twigs near the end of a limb, four feet above the ground being the lowest nest I have seen, while twenty feet up was the highest.

Finally I may say that, altho the bird will not leave her home until she is in actual danger, it is by far the hardest nest to find of any hummer in my experience.